Art. VII.—*Further Descriptions of the Tertiary Polyzoa of Victoria.—Part VII.*

By C. M. MAPLESTONE.

(With Plates VI., VII. and VIII.).

[Read 12th September, 1901.]

Schizoporella nitidissima, n. sp. (Pl. VII., Fig. 1).

Zoarium encrusting. Zooecia oval, convex; surface rugose, with a row of pores on the margin. 6–8 stout spines on distal end. Thyrostome arched above, proximal margin straight with a narrow sinus. An avicularium on a rugose stem on one side of the zooecia near the base; mandible very acute, with a bar and a semicircular cavity. Primary cell circular, with twelve stout spines round the edge; opening circular, with two denticles probably the points of the attachment of the operculum.

Locality.—Mitchell River (J. Dennant).

A single specimen, and a most interesting one, as it is a young zoarium, and has, what I have never seen recorded in fossil polyzoa, a primary cell; the spines are very short and thick, and probably are the bases of longer spines; the avicularia are also peculiar in having stems.

Schizoporella vigilans, Waters. (Pl. VII., Fig. 2).

I have several specimens of this species which is somewhat variable; some agree with the original description, in having elongated pores all over the surface, others have a single row round the edge and the zoarium is not always quadrilateral, but is always in vincularia form. One specimen bears ooecia, which have not hitherto been described or figured. They are globose and covered with small shallow pits and granulations.

Localities.—Aire Coastal Beds (Hall and Pritchard); Cape Otway (J. Dennant); Curdies Creek (A. W. Waters).

Schizoporella terebrata, n. sp. (Pl. VII., Fig. 3).

Zoarium encrusting. Zooecia undefined ; surface slightly granulated, with irregularly disposed pores of various sizes, but occasionally they are in a row, indicating the margin of the zooecia. Thyrostome with a long sinus in the proximal margin. Large raised avicularia, with long acute mandibles, on one side below the thyrostome and in a similar position, sometimes one, occasionally two very narrow slender avicularia with the mandible pointing downwards. Ooecia small, globose, partially immersed, surface rough.

Locality.—Mitchell River (J. Dennant).

In this species the sinus is unusually long and in addition to the avicularia above described, there is, in the portion figured (near the top) a semi-elliptical avicularium with a small projecting plate at one end, and two small pores at the other, sometimes the long narrow ones are reduced in length, and elongated oval in shape.

Schizoporella convexa, McG. (Pl. VII., Fig. 4).

I have specimens of this species from the Mitchell River deposits, which bear ooecia. They are subglobose, adnate upon the ooecia above, with a bordered area in front bearing radiating lines, surrounded distally with a narrow cross-ribbed depressed area and they are remarkably like those of Microporella diadema.

Schizoporella ovalis, n. sp. (Pl. VII., Fig. 5).

Zooecia irregularly hexagonal, ventricose ; a row of pores (sometimes two) round the margin, sometimes absent. Thyrostome small, subtriangular, with a very narrow sinus. Avicularia elongated oval, slightly raised, with mandibular cavity pointing distally.

Locality.—Mitchell River (J. Dennant).

In the place of the ooecia in this species there are suborbicular smooth concave areas with raised margins which probably represent the dorsal walls of orbicular ooecia, but as they are perfectly smooth it is possible they may be deeply immersed ooecia : therefore, as it is uncertain which they are, I have not included them in the specific description.

Schizoporella mamillata, n. sp. (Pl. VII., Fig. 6).

Zooecia elongated, oblong, flat; surface covered with large mamillæ, between which are a few minute perforations. Thyrostome arched above, proximal margin with a long narrow sinus slightly contracted in the middle. A small oval avicularium, furnished with a bar, below and close to the thyrostome on one side of some zooecia.

Locality.—Jimmys Point, Reeves River (J. Dennant).

The zooecia vary considerably in size, but the species may be easily distinguished by the large and uniform size of the mamillae.

Schizoporella pulvinata, n. sp. (Pl. VII., Fig. 7).

Zooecia small, oval; the central part with a large raised oval area, the centre of which has a longitudinal cleft or depression; some zooecia are perforated with a few small pores. Thyrostome small, arched above, with a very small sinus in the lower lip; a small hemispherical umbo sometimes present above it. Ooecia globose.

Locality.—Clifton Bank, Muddy Creek (T. S. Hall).

This is a very curious specimen, it is adherent on the interior of a bivalve shell, and the large oval elevated area occupies almost the whole front of the zooecia, obscuring in almost every case the proximal part of the thyrostome. The two perfect ooecia figured have their opercula in sitû.

Schizoporella hispida, n. sp. (Pl. VII., Fig. 8).

Zoarium encrusting. Zooecia oval, ventricose; covered with rough irregular tubercles. Thyrostome arched above, with a narrow sinus in the lower margin. Ooecia globose, subimmersed, very rugose.

Locality.—Muddy Creek (H. Butler).

I do not know which bed this came from. I received it many years ago when at Portland. It is remarkable for the very rough irregular tubercles all over the surface and very difficult to represent.

Schizoporella subgranulata, n. sp. (Pl. VII., Fig. 9).

Zooecia broad, hexagonal, with smooth small regular granulations. Thyrostome arched above; rather shallow sinus in lower margin. A very small oval avicularium on a raised rounded base immediately below the thyrostome.

Locality.—Cape Otway (J. Dennant).

A single specimen with four perfect zooecia.

Schizoporella flabellata, n. sp. (Pl. VIII., Figs. 10, 10*a*.)

Zoarium flabellate. Zooecia oval or vasiform; surface punctured. Thyrostome orbicular, sinus moderate.

Locality.—Jimmys Point, Reeves River (J. Dennant).

This species is remarkable for the very elegant flabellate form of the zoarium. The zooecia are regularly arranged on both sides of a calcareous lamina, on the margins of which are narrow ridges, presumably the first part formed of the young zooecia. The zooecia on this specimen are much worn, but there was a small fragment with zooecia perfect from which Fig. 10*a* is drawn.

Schizoporella fenestrata, Waters. S. profunda, McG. (Pl. VIII., Fig. 11).

Dr. MacGillivray described and figured in his Monograph of the Tertiary Polyzoa of Victoria (p. 83, pl. xi., Fig. 14.) S. profunda, and gives as a synonym "?S. fenestrata, Waters," but does not mention any particulars in which his species differs from that of Mr. Waters. A comparison of the descriptions (Mr. Waters gives no figure) seems to show that they are not identical, the principal character in common being the great depression in which the thyrostome is placed, but the specimen from which Fig. 11 is drawn enables me to reconcile the differences. In this specimen the zooecia are "indistinct," as described by Mr. Waters[1] (S. fenestrata), but I have others in which they are "separated by narrow raised lines" (S. profunda). There are very large avicularia "between the zooecia" (S. fenestrata) and also on the "extreme lateral zooecia" (S. profunda). In the description of S. fenestrata no mention is made of any spines

[1] Q.J.G.S., vol xxxvii., p. 339.

above the thyrostome, and S. profunda is said to have about five. Generally there are none, but I have found traces of them in some of the infertile zooecia of the specimen figured, but had I not specially looked for them they would not have been noticed. The great depression in which the thyrostome is placed is a most conspicuous feature in all the specimens, and in worn ones it is the only characteristic visible. The ooecia are not mentioned by either Dr. MacGillivray, or Mr. Waters.

My specimen is from the Gellibrand River deposits. It is in very good preservation, about half an inch long, broadly ligulate in form, with a bifurcation, the zooecia are on both sides. There are many large avicularia both between the zooecia and on the margin of the zoarium: these have a longitudinally curved mandible 0·5 mm. long, a crossbar with a central ligula and sometimes two lateral ones also. The semicircular area behind the crossbar is divided into two parts by another slightly curved crossbar; these, when broken, are probably what Mr. Waters refers to as the large avicularia with "numerous denticles." The oval avicularia have also a crossbar with a central ligula. There are also a small circular avicularia scattered over the surface. The ooecia are large, globose and smooth.

I have described the points in which S. profunda, and S. fenestrata agree, and in which they differ at some length, because without explanation their identify would not be perceived, for my figure differs greatly from that given by Dr. MacGillivray; his does not show any avicularia, nor is the great depression in which the thyrostome is placed apparent. An examination of specimens of S. profunda in the National Museum, confirms my conclusions; consequently that species must lapse.

Schizoporella variabilis, n. sp. (Pl. VIII., Fig. 12).

Zoarium ligulate, apparently in short internodes. Zooecia on both faces. Zooecia irregularly oval, surface either rugose or mamillated. Thyrostome depressed, orbicular, with a rounded sinus; margin raised. Large avicularia situated below, or on one side of the thyrostome; occasionally a small oval avicularium near the proximal part. Ooecia globose, subimmersed.

Locality.—Aire Coastal Beds (Hall and Pritchard).

The dorsal surfaces of the ooecia only are visible, the front has broken away. The species is very variable, in some specimens the surface of the zooecia is simply somewhat irregular, in others covered with large mamillae completely obscuring the shape of the zooecia, and leaving the thyrostomes and dorsal surface of the ooecia much depressed.

Schizoporella chlithridiata, n. sp. (Pl. VIII., Fig. 13).

Zooecia oval, distal extremity overlapping; surface faintly ribbed horizontally, the centre portion below the thyrostome raised into a long smooth process; on the rest of the surface are a few small scattered pores or minute papillae. Thyrostome arched above, broad curved sinus in lower lip. Avicularia vicarious, with well-defined pores in more or less regular rows; mandibular cavity chlithridiate. Ooecia subglobose, immersed, with a longitudinal umbo.

Locality.—Clifton Bank, Muddy Creek (T. S. Hall).

A colony on a small bivalve shell. The great peculiarity of this species is the vicarious avicularium and its chlithridiate mandibular cavity. The ooecia are generally more produced distally into a prominent umbo than the one figured, but the portion illustrated was chosen as it shows three of the avicularia.

Schizoporella ambigua, n. sp. (Pl. VIII., Fig. 14).

Zooecia large, hexagonal; margins raised; surface covered with large perforations. Thyrostome arched above; lower margin with a very wide shallow sinus. Ooecia large, globose, slightly immersed, perforated; with a large acute avicularium, on the distal part on one side, with the mandible pointing proximally.

Locality.—Mitchell River (J. Dennant).

This is a very striking species, as it has avicularia on the ooecia. On one zooecium there is on one side of the thyrostome a hemispherical avicularium, with a semicircular mandibular opening. The thyrostome has a very wide shallow sinus, and on this account I think this species should, with others having similar thyrostomes, be relegated to a new genus, as they differ so much from the typical forms with a narrow sinus.

Gemellipora auriculata, n. sp (Pl. VIII., Fig. 15).

Zooecia oval, ventricose. Thyrostome longer than broad, with a deep, pointed triangular sinus on the proximal margin. A comparatively large ear-shaped raised avicularium on one side of the zooecia.

Locality.—Mitchell River (J. Dennant).

This is near *G. elegantissima*, McG., but the avicularia are much larger, and the surface of the zooecia is smooth, not perforated. The avicularia are sometimes absent, and on one (broken) zooecium on another specimen there are two avicularia (Fig. 15*a*).

Aspidostoma airensis, n. sp. (Pl. VIII., Fig. 16, 16*a*).

Zoarium robust, in vincularia form. Zooecia very large, elongate, produced beyond the thyrostome as a more or less acute, concave process ; a small acute avicularium on one side of the zooecia. Thyrostome arched above ; proximal margin with a very broad projecting lip, leaving a narrow opening or sinus at each lower angle. Ooecia globose, with a large flat area in front surrounded by a narrow ridge.

Locality.—Aire Coastal Beds (T. S. Hall).

This is a very large celled species, the acute distal prolongation of the zooecia is very characteristic. On the zooecium which bears an ooecium the concave prolongation is represented by a long round rough spine on the side of the thyrostome. The surface of the proximal margin of the zooecia is slightly turned up in very regular small square crenulations—an ornamentation of a character I have not before seen in polyzoa. I have some fragments from Cape Otway in which the zoarium has zooecia on one side only, and they are not produced distally into a point, although they protrude somewhat ; they are probably imperfect specimens of this species.

Cellaria incudifera, n. sp. (Pl. IX., Fig. 17, 17*a*).

Zoarium large, cylindrical. The zooecia vary in shape. In the ordinary zoarial form some are battledore-shape, some diamond-shape ; but in the stouter zoaria they are elongated hexagonal with distal and proximal margins horizontal ; all have

raised borders. Thyrostome oval, or subquadrate, higher than wide, with an anvil-shaped process growing in a proximal direction from the distal margin.

Locality.—Spring Creek (T. S. Hall).

This species is at once recognised by the peculiar anvil-shaped process projecting from the distal end over the thyrostome. In the larger form, with the hexagonal zooecia, there is a very large opening above the thyrostome; these openings are probably ovarian pores of a similar character as, but much larger than, those of *C. cucullata*, McG., their occurrence on the larger form only supports this opinion.

Fig. 17*b* is an end view of an internode showing three pores through which the chitinous connecting cords passed.

Cellaria robusta, n. sp. (Pl. IX., Fig. 18).

Zoarium robust. Zooecia large and broad, somewhat diamond-shaped or hexagonal with angles at distal and proximal ends; margins raised and curved so that the sides often do not show any lateral angles. Thyrostome suborbicular with two small denticles projecting from the proximal margin, and a plate showing two small denticles projecting from the distal margin. Avicularian cell with aperture arched above; lower margin incurved.

Locality.—Spring Creek (T. S. Hall).

Of this species I have found only a few small fragments. The avicularian cell has an opening very little larger than the thyrostome of the zooecia, and might be mistaken for one, but it has no denticles, and has an incurved lower margin; there is a small hemispherical umbo above it.

Micropora carinata, Maplestone. (Pl. IX., Fig. 19).

This species was described by me in my last paper.[1] I have since found a specimen bearing ooecia, which I now figure. They are large, globose, broader towards the distal end; smooth, with four small clefts on the distal border.

Locality.—Mitchell River (J. Dennant).

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1 Proc. Roy. Soc. Vic., vol. xiii., pt. ii., p. 207.

? Lepralia bisinuata, n. sp. (Pl. IX., Fig. 20).

Zooecia quadrate, flat, with a row of large pores round the margin which is narrow and slightly raised. Thyrostome horse-shoe-shaped with a projection on each side near the lower margin, the centre of which is incurved, forming a sinus in each lower angle. A small oval avicularium, with a bar, below the thyrostome.

Locality.—Mitchell River (J. Dennant).

A single specimen. In two of the zooecia figured the avicularium is perfect, in one it is only partly developed, and in the fourth it is absent. This I at first supposed to be a Smittia near S. reticulata; on further examination the form of the thyrostome, as shown on a larger scale in Fig. 20*a*, was found to be Lepralian of a type similar to L. cleidostoma, Smitt., but the inward curvature of the lower or proximal margin forming a sinus in each corner is peculiar, it simulates the "lyrula" found in most of the Smittiae, but that is always internal or below the level of the thyrostome, this is part of the margin itself, it may require a new genus for its reception near Smittia, distinguished therefrom by the double sinus.

Trypocella, nov. gen.

Zooecia elongate, flat. Thyrostome orbicular, with an acute sinus in the proximal margin formed by the incomplete junction of the cell wall. No peristome.

Trypocella excavata, n. sp. (Pl. IX., Fig. 21).

Zooecia elongate, irregularly hexagonal, with a row of large pores round the margin. Central portion concave. Thyrostome orbicular with a very acute sinus. A large circular pore on each side a little below the thyrostome.

Dorsal surface with large pores.

Locality.—Spring Creek (T. S. Hall).

A single specimen in good preservation. I cannot assign this species to any of the existing genera of the Escharine group on account of the very peculiar structure of the thyrostome, which is without any raised margin or peristome; it appears as though

the calcification of the front wall of the cell proceeded from the margins to the centre and did not quite coalesce at the centre of the proximal margin of the thyrostome forming the sinus, and the depressed area below it may be owing to a low degree of calcification. The two large circular pores below the thyrostome are very conspicuous, and probably are either avicularian or vibracularian.

EXPLANATION OF PLATES VI., VII. AND VIII.

1.—Schizoporella nitidissima, n. sp.
2.—S. vigilans (ooecia), Waters.
3.—S. terebrata, n. sp.
4.—S. convexa, M'G. (ooecia).
5.—S. ovalis, n. sp.
6.—S. mamillata, n. sp.
7.—S. pulvinata, n. sp.
8.—S. hispida, n. sp.
9.—S. subgranulata, n. sp.
10.—S. flabellata, n. sp. (zoarium). *a.* zooecia.
11.—S. fenestrata, Waters.
12.—S. varabilis, n. sp. *a.* ooecia.
13.—S. chlithridiata, n. sp.
14.—S. ambigua, n. sp.
15.—Gemellipora auriculata, n. sp.
16.—Aspidostoma airensis, n. sp. *a.* ooecium.
17.—Cellaria incudifera. n. sp. *a.* hexagonal zooecia. *b.* end of zoarium.
18.—Cellaria robusta, n. sp.
19.—Micropora carinata, Maplestone (ooecium).
20.—? Lepralia bisinuata, n. sp. *a.* outline of thyrostome.
21.—Trypocella excavata, n. g. et. n. sp.

All Figures × 25.